

Fluorescent Lamp Recycling

You see them everywhere... in local businesses, large retailers, hospitals, schools, grocery stores, offices and government buildings. Fluorescent lighting is a common fixture in many buildings thanks in part to its energy efficiency and the cost savings it provides.

Most of us are familiar with fluorescent bulbs including the common four-foot and eight-foot "tubes." Most of us know that the bulbs are energy efficient – using about one-fourth the energy and lasting about 10 times longer than incandescent bulbs (light bulbs). That efficiency saves energy and money.

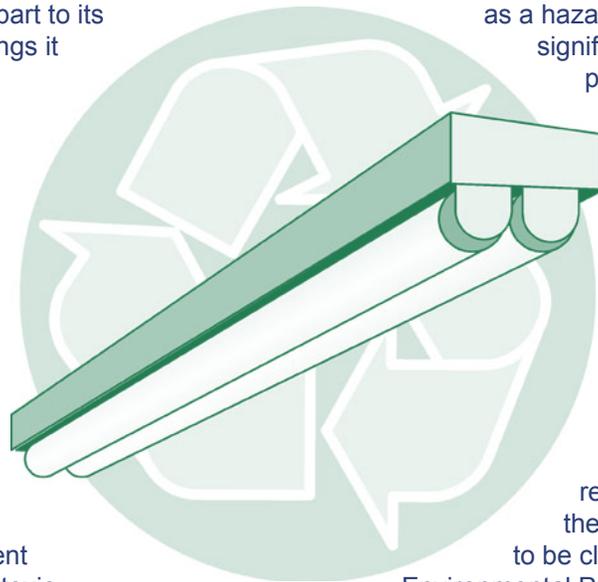
Many of us, however, are unaware that fluorescent lamps as well as other types of energy-efficient lighting contain mercury – which is toxic. When broken, compacted, crushed or disposed of improperly, fluorescent bulbs may release mercury into the air, water and soil posing a significant risk to human health and the environment.

Some fluorescent bulb manufacturers have introduced "green" tip bulbs. While these bulbs typically contain less mercury than standard fluorescent tubes, generators are encouraged to recycle "green" tip bulbs as well as all other mercury-containing bulbs. For information on other management options, please call DHEC's Division of Compliance and Enforcement (C&E) at **(803) 896-4136**.

It is important to note that all generators of spent fluorescent lamps are responsible by law for their proper disposal. Building owners and property managers need to ensure they are doing their part to limit mercury exposure and properly handle fluorescent lamps at the end-of-life.

Fluorescent bulbs and other types of energy-efficient lighting as well as nickel-cadmium batteries, pesticides and thermostats are regulated under the Universal Waste Rule (UWR) in South Carolina. The UWR allows businesses,

government agencies and other generators an opportunity to recycle lamps and other types of universal waste at the end of life rather than manifesting and disposing of them as a hazardous waste. This can result in significant savings for the business or property owner. Recycling also helps protect our environment from potentially toxic materials.



The Association of Lighting and Mercury Recyclers (ALMR) estimates that at least 400 million mercury lamps are being disposed of annually as part of the municipal solid waste stream and only 20 percent of all mercury lamps are being recycled. In South Carolina, the recycling rate is estimated to be closer to 5 percent. The U.S.

Environmental Protection Agency (U.S. EPA) has established a goal to increase the recycling rate of fluorescent lamps to 80 percent by 2009.

The good news is that recycling fluorescent bulbs is easy to do. There are many companies that provide recovery and processing services including several in the state.

Benefits of Fluorescent Lamp Recycling

All fluorescent lamps contain mercury. In fact, the standard fluorescent bulb has about 20 milligrams of mercury. It's clear that these lamps must be managed properly to protect human health and the environment.

Spent lamps have no fundamental value. The value of mercury recovered during the recycling process is dependent on markets. Yet the cost of recycling mercury lamps is relatively small compared to the cost savings from using energy-efficient lamps.

In addition, the recycling of these bulbs may limit a company's or business owner's liability and reduce

the need for enforcement action. Clearly, the best management option is to recycle the lamps.

As a building owner or property manager, you can influence the decision to properly manage fluorescent lighting at the end of life. There are two categories for lamp generators:

 **SMALL-QUANTITY HANDLER** – This is a generator or third party such as a contractor that accumulates less than 11,000 pounds of all kinds of universal waste (including fluorescent bulbs) at one time. A small-quantity handler may store the lamps for up to a year. While no formal registration with U.S. EPA is required of small-quantity generators, training, information on handling mercury lamps and emergency procedures are required as is proper marking and labeling.

 **LARGE-QUANTITY HANDLER** – This is a generator or third party such as a contractor that handles 11,000 pounds or more of all kinds of universal waste (including fluorescent bulbs) at one time. A large-quantity handler must register with U.S. EPA and receive an identification number. Large-quantity handlers also are required to receive the appropriate training and information on handling lamps as well as establish emergency procedures and use the appropriate marking and labeling system.

It is important to note that the UWR **encourages** all generators of fluorescent lamps to follow the guidelines established for large-quantity generators.

By recycling lamps under the guidelines, generators can avoid hazardous waste manifest requirements and expensive disposal. There also is no need for analytical testing or reporting, but lamps must remain intact. **Generators should not crush or treat lamps to be in compliance with universal waste handling requirements.**

Several companies provide collection and recycling services for a fee. Fees may vary based on transportation

costs and volumes for pick up. Once the lamps are properly recycled, the generator will receive a certificate of recycling. Check out the company that is offering to recycle your lamps.

When purchasing lighting for your building, look for bulbs that not only provide the greatest energy efficiency and longest life, but also contain the lowest possible mercury content. If the vendor you purchase lamps from doesn't provide recycling information, there are a number of other resources available to help you properly manage your lamps – see the Web addresses provided below. In addition, see the Technical Assistance Fact Sheet "Proper Management of Universal Waste Lamps" at www.scdhec.gov/recycle/html/pubs.html.

For more information about the UWR, call DHEC's Division of C&E at **(803) 896-4136**. For more information about the recycling of fluorescent lamps, call DHEC's Office of Solid Waste Reduction and Recycling at **1-800-768-7348**.

Web Sites to Visit for More Information...

-  www.scdhec.gov/eqc/admin/html/wmrindex.html
-  www.nema.org/lamprecycle
-  www.almr.org
-  www.epa.gov/epaoswer/hazwaste/id/univwast/quest.htm#exempted

SOURCES: Association of Lighting and Mercury Recyclers; U.S. Environmental Protection Agency; National Electrical Manufacturers Association (NEMA); and INFORM, Inc.

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The Business Recycling Assistance Program is a partnership of the S.C. Department of Commerce's Recycling Market Development Advisory Council and the S.C. Department of Health and Environmental Control's Center for Waste Minimization, Small Business Assistance Program and Office of Solid Waste Reduction and Recycling. Its mission is to provide technical assistance opportunities for **waste reduction, recycling, buying recycled and recycling market development** to businesses and industries. For more information, call **1-800-768-7348** or visit www.scdhec.gov/brap. You may also contact Karen Owens, Business Recycling Assistance Program project manager, at **(803) 737-0239**.

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